

## Snyder, Erik

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**From:** Sue Kemball-Cook <skemballcook@ramboll.com>  
**Sent:** Tuesday, March 07, 2017 4:59 PM  
**To:** Erik Gribbin; Marise Textor (marise.textor@wnr.com)  
**Cc:** Stephen Davis; stephanie.shirley@tceq.texas.gov; Jim Price; Snyder, Erik  
**Subject:** RE: Questions from the EPA regarding

Erik,

Below please find responses to EPA questions in red.

Please let me know any additional information or clarification that would be helpful.

Regards,  
Sue

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**From:** Erik Gribbin [mailto:erik.gribbin@tceq.texas.gov]  
**Sent:** Tuesday, March 7, 2017 9:35 AM  
**To:** Marise Textor (marise.textor@wnr.com)  
**Cc:** Stephen Davis; Stephanie Shirley; Jim Price; Erik Snyder (snyder.erik@epa.gov); Sue Kemball-Cook  
**Subject:** Questions from the EPA regarding

Marise,

The EPA has sent us some questions regarding the revised memo and modeling.

1. Could you indicate what fires were included in the fire run and indicate if it is all fires in Mexico and the U.S. as the memo seems to read? Can you clarify what fires, if any, were in the "no fire" run? Does the "no fire" run just remove the exceptional event fires, or all U.S. and Mexico fires (or something in between)? We used a 2015 fire emission inventory provided by EPA (personal communication with Alison Eyth, EPA, December, 2016) and the FINN fire emission inventory for Mexico (Wiedinmyer et al., 2011; <http://www.geosci-model-dev.net/4/625/2011/gmd-4-625-2011.pdf>). The "fire" CAMx run included emissions from all US and Mexico fires as captured in these two data sets. The "no fires" CAMx run had all US and Mexico fire emissions removed.
2. Could you indicate what was done differently between the first and second memos? Based on the data at the monitors and the spatial plots it appears to be a separate modeling analysis. The new memo doesn't explain why there are differences. The second memo is a corrected version of the first memo. The second memo is based on a second modeling analysis that used a corrected version of the fire emission inventory and a corrected version of the contour plot shown in Figure 1. We found that in the original CAMx run with fires, we dropped several VOC species from the fire emissions processing (e.g. toluene and xylene from US fire emissions, methyl glyoxal from FINN Mexico fires). We corrected the emission inventory and reran the CAMx model and redid the post-processing and plots. The corrected CAMx run showed only very small (order of a tenth of a ppb) ozone differences from the original run in the El Paso area. As we checked the new CAMx results, we found that we had an error in the original plot of the daily maximum 8-hour ozone fire impact results (Figure 1 of the memo) such that the contours were incorrectly offset to the north by about 20 km. We have corrected this error and are confident that the plot is now correct as the plots in Figures 1 and 2 now show consistent data.
3. Additional issues/questions might include how the fires were modeled and model/performance data/analysis (WRF/CAMx). The US fire inventory from EPA was modeled using SMOKE and then converted to CAMx format. The FINN fire emissions were modeled with the EPS3 emissions modeling system using the WRAP plume

rise algorithm. A detailed description of the fire emissions processing was provided in the Readme files on the disk sent to EPA. We evaluated model performance for WRF and CAMx through comparison of model predictions and observations at surface monitoring stations, with a focus on the 4 km domain. We have prepared PowerPoint presentations summarizing the model performance evaluations and can provide them if this would be helpful.

Erik

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